



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/005,784	11/08/2001	Shih-Zheng Kuo	JCLA7786	1354

43831 7590 03/31/2006

BERKELEY LAW & TECHNOLOGY GROUP  
1700NW 167TH PLACE  
SUITE 240  
BEAVERTON, OR 97006

EXAMINER

SAFAIPOUR, HOUSHANG

ART UNIT PAPER NUMBER

2625

DATE MAILED: 03/31/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/005,784	<b>Applicant(s)</b> KUO, SHIH-ZHENG	
	<b>Examiner</b> Houshang Safaipour	<b>Art Unit</b> 2625	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 11 January 2006.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-29 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 8-11 and 26 is/are allowed.
- 6) ☒ Claim(s) 1,2,5,6,12-15,17-25 and 27-29 is/are rejected.
- 7) ☒ Claim(s) 3,4,7 and 16 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

### **DETAILED ACTION**

Applicant's amendment filed on January 11, 2006 has been entered and made of record.

Applicant's arguments have been considered, but are moot in view of the new grounds of rejection.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 2, 5, 6 and 25 are rejected under 35 U.S.C. 102(b) as being anticipated by Ishiwata (U.S. Patent No. 5,189,529).

Regarding claim 1, Ishiwata discloses a method comprising:

scanning an object using a stagger (zig-zag) sensor (fig. 18(a), col. 29 lines 37-40);  
retrieving reference digital data (col. 31 lines 11-23); and  
calculating a computed pixel value using at least in part the retrieved reference digital data captured by the scanning operation (col. 31 lines 11-23).

Regarding claim 2, Ishiwata discloses the method of claim 1, wherein scanning an object using a stagger (zig-zag) sensor comprises scanning the object using a stagger sensor including a plurality of scanning modules, the plurality of scanning modules including plurality of light sensing cells (col. 29, lines 15-59).

Art Unit: 2625

Regarding claim 5, Ishiwata discloses the method of claim 1, wherein reference digital data includes digital data obtained from light sensing cells in the sensing module (col. 31, lines 11-23).

Regarding claim 6, Ishiwata discloses the method of claim 1, wherein a sensing module inside the stagger sensor has a slight shift in position relative to another sensing module (fig. 18a).

Regarding claim 25, arguments analogous to those presented for claim 2 are applicable to claim 25.

Claims 12-15 and 27-29 are rejected under 35 U.S.C. 102(b) as being anticipated by Hemmings et al. (U.S. Patent No. 6,728,009).

Regarding claims 12 and 27 Hemmings et al. discloses a first sensing cell of a first sensing module 6 (fig. 6) and second light sensing cell of second module 5 (fig. 6) and that a first ends of the first and second cells are in the same position and their second ends are in a different position (fig. 6).

Regarding claims 13 and 28 Hemmings et al. discloses that the first light sensing cell includes a width greater than any other sensing cell in the first sensing module 6 (fig.6).

Regarding claims 14 and 29 Hemmings et al. discloses that the first light sensing cell includes a width greater than any other sensing cell in the first sensing module 6 (fig.6).

Regarding claim 15 Hemmings et al. discloses that the first light sensing cell includes a plurality of scanning spaces (fig. 6, col. 4 lines 37-52).

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ishiwata (U.S. Patent No. 5,189,529) and further in view of Hemmings et al. (U.S. Patent No. 6,728,009).

Regarding claim 7 Ishiwata does not explicitly disclose a first light sensing cell of a first sensing module and a second light sensing cell of a second sensing module include a first end at substantially the same position along the axis and wherein the first light sensing cell has a second end in a different position along the axis than a second end of the second light sensing cell.

Hemming et al discloses a first sensing cell of a first sensing module 6 (fig. 6) and second light sensing cell of second module 5 (fig. 6) and that a first ends of the first and second cells are in the same position and the sells second ends are in a different position. Therefore it would have been obvious to a person of an ordinary skill in the art to use the charge coupled device of Hemmings scanning system in Ishiwata's image processing system to further enhance the image resolution.

***Claim Rejections - 35 USC § 101***

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Art Unit: 2625

Claims 17-24 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. Claims 17-24 are drawn to functional descriptive material NOT claimed as residing on a computer readable medium. MPEP 2106.IV.B.1(a) (Functional Descriptive Material) states:

“Data structures not claimed as embodied in a computer-readable medium are descriptive material per se and are not statutory because they are not capable of causing functional change in the computer.”

“Such claimed data structures do not define any structural or functional interrelationships between the data structure and other claimed aspects of the invention which permit the data structure’s functionality to be realized.”

Claims 17-24, while defining a storage medium, do not define a “computer-readable medium” and is thus non-statutory for that reasons. A storage medium can range from paper on which the program is written, to a program simply contemplated and memorized by a person. The examiner suggests amending the claim to embody the program on “computer-readable medium” in order to make the claim statutory.

“In contrast, a claimed computer-readable medium encoded with the data structure defines structural and functional interrelationships between the data structure and the computer software and hardware components which permit the data structure’s functionality to be realized, and is thus statutory.” - MPEP 2106.IV.B.1(a)

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 17-24 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as

Art Unit: 2625

the invention. It is unclear, from the claim language, whether the invention is directed towards an article or method of manufacturing.

*Allowable Subject Matter*

Claims 3, 4 and 16 recite calculating a computed pixel value including:

if a first light-sensing cell of a first sensing module includes a reference digital data and a second light-sensing cell of a second sensing module and the first light-sensing cell having some overlap in a forward scanning direction, digital data of a pixel in the region in the second light-sensing cell having no overlap with the first light-sensing cell is obtained in accordance with the following relationship:

$$A(X)=F(X)*N-A(X-1)-A(X-2)-\dots-A(0)*(N-X); \text{ and}$$

where X comprises a desired pixel, N comprises a number of pixels included in a light-sensing cell, A(X) comprises digital data corresponding to an X<sup>th</sup> pixel, A(1) comprises digital data of the first pixel, and F(X) comprises digital data captured during the scanning operation including pixels captured by the light-sensing cell are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Independent claims 8 (dependent claims 9-11 and 26) are allowed. These claims recite a method of improving modulation transfer function through scanning an object with a stagger sensor that comprises a first light sensing cell of a first sensing module and a second light sensing cell of a second sensing module include a first end at substantially the same position along the axis and wherein the first light sensing cell has a second end in a different position

Art Unit: 2625

along the axis than a second end of the second light sensing cell. The method further comprises obtaining digital data of a first pixel using a difference in scanning region between the first light sensing cell and the second light sensing cell and processing digital data of a plurality of subsequent pixels after a scanning of the object according to the digital data of the first pixel.

### ***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

### ***Contact Information***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Houshang Safaipoor whose telephone number is (571)272-7412. The examiner can normally be reached on Mon.-Fri. from 6:00am to 2:30pm.

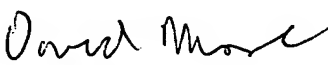


Art Unit: 2625

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dave Moore can be reached on (571) 272-7437. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Houshang Safaipoor  
Patent Examiner  
Art Unit 2625  
March 15, 2006

  
**DAVID MOORE**  
**SUPERVISORY PATENT EXAMINER**  
**TECHNOLOGY CENTER 2**